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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,344	12/21/2001	Frank Muller	PTT-128 (402571US)	8722

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EXAMINER

DERWICH, KRISTIN M

ART UNIT

PAPER NUMBER

2132

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/019,344	MULLER ET AL.	
	Examiner	Art Unit	
	Kristin Derwich	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 15-24 are pending.

Claim Rejections - 35 USC § 112

2. Amendments to the claims in order to correct the prior informalities are acceptable, therefore the rejections are withdrawn.

Response to Arguments

Applicant's arguments with respect to claims 15-24 have been considered but are moot in view of the new ground(s) of rejection necessitated by Applicant's amendments. Applicant's arguments with regards to the fact that one of ordinary skill in the art would not combine the Kocher and Moroney patent based on col. 4, line 53 et seq in Kocher, that random must be "truly random" and thus not pseudo-random, Examiner respectfully disagrees. Kocher goes on to say, "Therefore, as used herein, any term described as 'random' will be understood to include truly random, *and also pseudorandom or otherwise unpredictable*" (emphasis added) in col. 4, lines 53-57. Thus, the more random a pseudorandom number generator can become the more secure the Kocher invention can be.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Hereafter patent literature that is referenced as prior art will be cited by column and line number in the form of (column number:line number range). For example, the citation (6:23-27) refers to lines 23-27 of the 6th column in the reference.

3. Claim 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Moroney et al. (Moroney), U.S. Patent No. 5,054,067 in view of Kocher et al. (Kocher), U.S. Patent No. 6,327,661.

As per claims 15, 16, 17 and 24:

Moroney substantially teaches loading plaintext and an encryption key (2:29-35) into both linear and nonlinear feedback shift registers to produce a pseudorandom nonlinear sequence (3:1-12). Moroney fails to teach this method as it would apply to protecting a smart card from attack. However, Kocher discloses a method wherein a pseudorandom number generator is used in clock skipping (7:24-29) in order to protect a smart card from attack (6:19-22). Moroney's control on the linear and non-linear feedback functions in order to make the key stream more random results in better protection for the card described in Kocher.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to utilize Moroney's pseudorandom number generator because it would have increased the randomness of the pseudorandom generator thus increasing the security of the system as a whole (Moroney, 1:46-58).

As per claim 16:

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Moroney and Kocher substantially teach a method for protecting a card as applied to claim 15 above and furthermore, Moroney discloses a method comprising invoking the linear and non-linear feedback functions in a predefined sequence (3:3-7).

As per claim 17:

Moroney and Kocher substantially teach a method for protecting a card as applied to claim 15 above and furthermore, Kocher discloses a method wherein the information leaking away comprises either power-consumption data or electromagnetic radiation (5:9-14).

As per claim 24:

Moroney and Kocher substantially teach a method for protecting a card as applied to claim 15 above and furthermore, Moroney discloses a method wherein the remaining bytes of the N bytes produced by the key are loaded into a strictly linear feedback shift register, hence they are loaded utilizing only a linear feedback function and in order to produce the rest of the key stream, clocking on must occur thereafter (3:5-12).

4. Claims 18, 19 and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Moroney (U.S. 5,054,067) in view of Kocher (U.S. 6,327,661) as applied to claim 15 above, and further in view of Shimada, U.S. Patent No. 6,278,780.

As per claim 18:

Moroney and Kocher substantially teach a method for protecting a card as applied to claim 15 above and furthermore, Shimada discloses a method wherein after an internal key has been loaded into the shift register, it clocks on and data bits are loaded (2:4-12).

It would have been obvious at the time of applicant's invention to utilize Shimada's internal crypto-key generator in order to produce the initial values in Moroney's pseudorandom

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number generator in order to prevent a third party from tapping the data sequence without permission (Shimada, 1:6-14).

As per claim 19 :

Moroney and Kocher substantially teach a method for protecting a card as applied to claim 15 above and furthermore, Shimada discloses a method wherein after the shift register has been clocked on, the shift register's contents are filled with bits generated by the initial key since (2:4-12).

As per claim 23:

Moroney and Kocher substantially teach a method for protecting a card as applied to claim 15 above and furthermore, Shimada discloses a method wherein the internal keys generated are utilized as initial keys for linear feedback shift registers (1:6-14). Since they are the initial key, the content of the shift register is fixed in that it is always empty in order for the initial key to be loaded. In addition, after a key is loaded into the shift register of Moroney, both the linear and non-linear functions are active.

5. Claim 20, 21 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Moroney in view of Kocher as applied to claim 15 above, and further in view of Rose, U.S. Patent No. 6,510,228.

As per claim 21:

Moroney and Kocher substantially teach a method for protecting a card as applied to claim 15 above and furthermore, Rose discloses a method wherein at certain clock cycles an output is not generated, thus no new data is being loaded into the shift register during or prior to this clocking on period (12:12-25).

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It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to avoid loading data during certain clocking periods to produce stuttering in the stream cipher which would increase the non-linearity of the stream and thus increase the protection against attack (11:60-64).

As per claims 20 and 22:

Since the data is not being loaded into the shift register as mentioned in claim 11, the input data is not connected to the shift register since it is not being loaded during the clocking on period.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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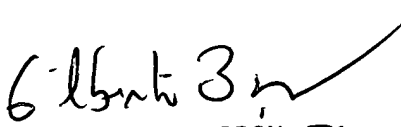
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristin Derwich whose telephone number is 571-272-7958. The examiner can normally be reached on Monday - Friday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kristin Derwich
Examiner
Art Unit 2132


KMD


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